# Office Products Division Customer Engineering

Mr. & Mrs. Edsel Sanders 818 E. Fairfield Mesa, Arizona 85203

PICTORIAL REFERENCE/ADJUSTMENT MANUAL



"Selectric" and "Selectric" II Typewriters

Form No. 241-5307-4 (Revised) August, 1971

## **FOREWORD**

The purpose of this booklet is to provide you with a compact visual reference. The part to be adjusted is shown in red and a red arrow indicates the direction of adjustment. If there are any questions regarding the adjustment, you should refer to the "Selectric" Typewriter Service Manual.

The adjustments have been divided into frames which are numbered in the proper adjustment sequence. The booklet should be used as follows:

Black numbers indicate proper adjustment sequence and frame identification.

Different levels are indicated in the same frame by level 1, level 2, etc., below the drawing.

Small red numbers at bottom of frame indicate adjustments out of sequence that are affected and should be checked.

Three vertical lines indicate end of an adjustment sequence,

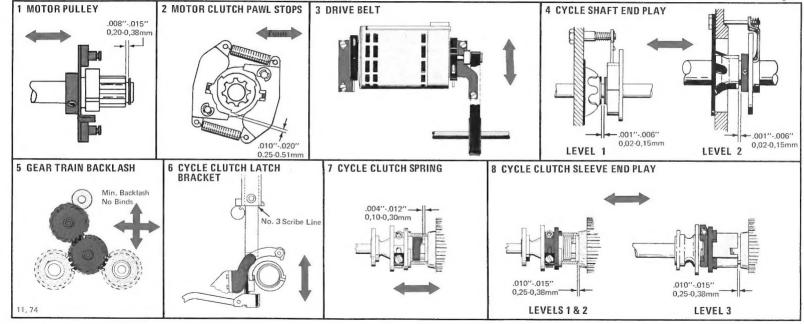
Copyright<sup>©</sup> By International Business Machines Corporation 1**971** Printed in U.S.A.

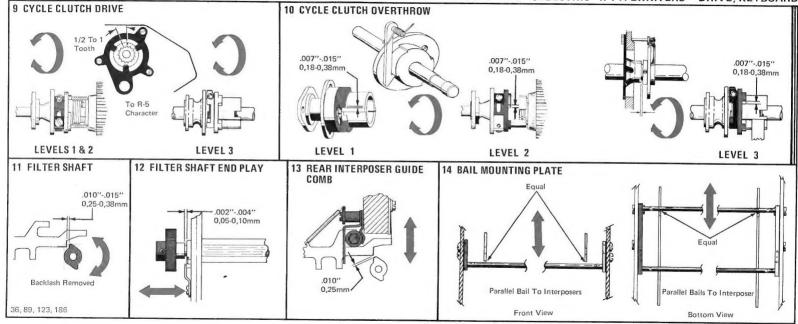
# "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS CONTENTS (Alphabetical)

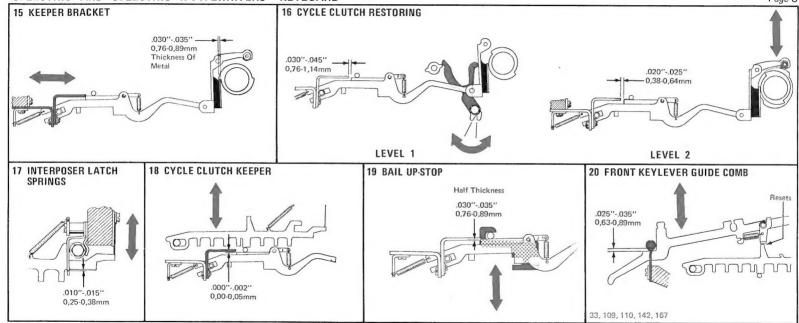
Name	Frame	Page		Page
ADJUSTMENTS			GENERAL INFORMATION	
Backspace	129	21	Broken Tapes Check Back of Co	ontents Page
Carrier Return	158	26	Call Prevention Machine Check	48
Character Selection	51	9	Cycle Inspection	48
Covers	272	44	Functional Check Back of Co	ontents Page
Dead Key	273	44	Identification Codes Inside	Rear Cover
Dead Key Disconnect	275	44	Lubrication Guide	49
Double Index	276	45	Shims	46
Drive	1	1	Type Element Arrangement	50
Escapement	76	12	Wiring Diagrams	47
Express Backspace	166	27		
External Ribbon Control	277	45		
Fabric Ribbon	243	39		
Film Ribbon	228	37		
Fine Alignment	39.	7		
Half Backspace	99	16		
Index	197	32		
Keyboard	11	2		
Manual Velocity Control	278	, 45		
Margin	218	35		
Operational Control ,	102	17		
Paper Feed	189	31		
Pin Feed Platen	280	45		
Print	170	28		
Rotary Backspace	210	34		
Selective Ribbon	255	41		
Shift	28	5		
Shift Sensing	281	45		
Spacebar	116	19		
Tab	132	22		

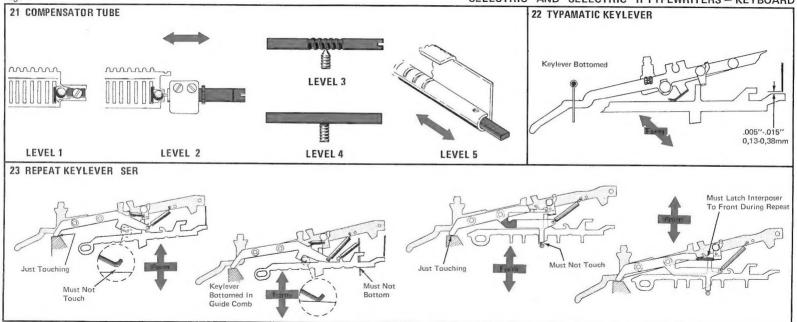
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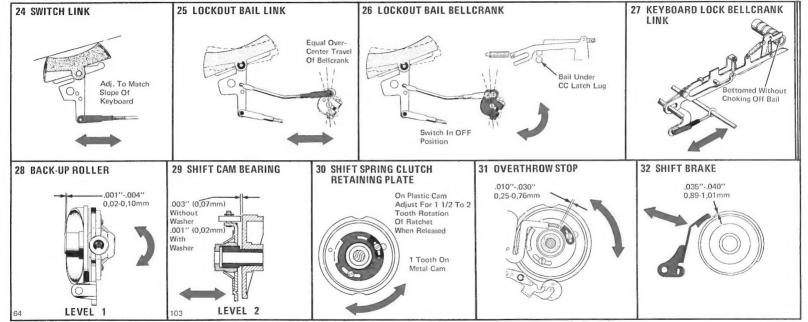
BROKEN	I TAPES CHECK	NOTES	FUNCTIONAL CHECK	
Rotate	е Таре		MISCELLANEOUS	RIBBON OPERATION
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.	Rotate detent clearance (skirt) Roller on detent actuating lever Print shaft timing Shift interlock adjustments Defective rotate arm & shift arm pulleys Tape guide Negative latch clearance insufficient Latch Links: too long/too short Popping latches Latch angle Interference between tilt & rotate pulleys Broken or sticking rotate spring Binding type element Shift arm/cord tension pulley bracket Chips in rotate pulley		1. Visual Inspection 2. On-Off Switch, Keyboard Lock 3. Margin Set 4. Margin Release 5. Linelock and Bell 6. Scales and Carrier Indicator 7. Switch Pitch Lever (Dual Pitch) 8. Index 9 Shift Lock PAPER HANDLING 1. Paper Insertion 2. Paper Release 3. Multiple Copy Control 4. Detent Release 5. Platen Variable	1. Ribbon Feed 2. Ribbon Lift Pattern 3. Ribbon Path and Tracking 4. Stencil Position 5. Ribbon Reverse (Fabric Ribbon)  PRINT 1. Strike Up – Check For: a. Impression b. Selection c. Alignment d. Keyboard Touch e. Shift 2. Repeat Character 3. Impression Control
2. 3. 4. 5. 6. 7.	Detent to tilt ring clearance Burrs on tilt pulley Binds in tilt ring Sector gear Print shaft timing Tilt pulley spring (off or broken) Interference between tilt & rotate pulleys Loose detent follower Tilt tape/carrier shoe eccentric stud		CARRIER MOVEMENT (Check all items in both pitches on dual pitch machines)  1. Spacebar and Escapement 2. Half Backspace 3. Backspace 4. Carrier Return 5. Express Backspace 6. Tab	

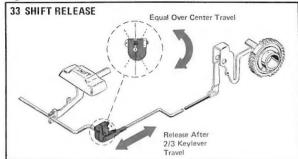


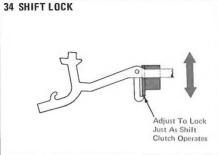


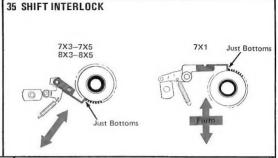


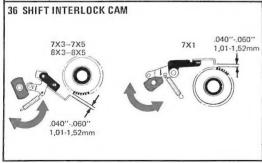


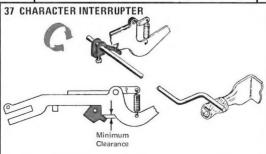


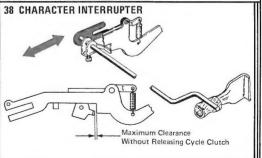


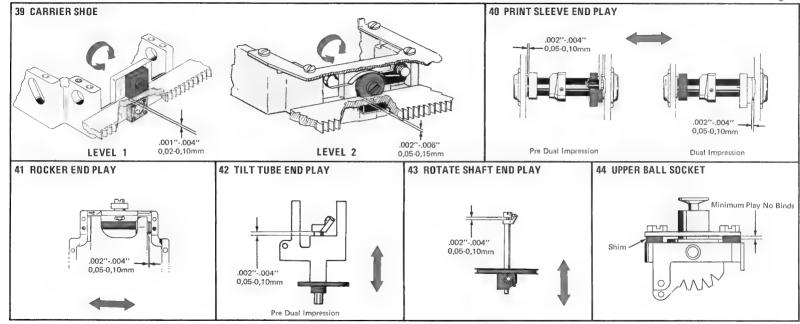


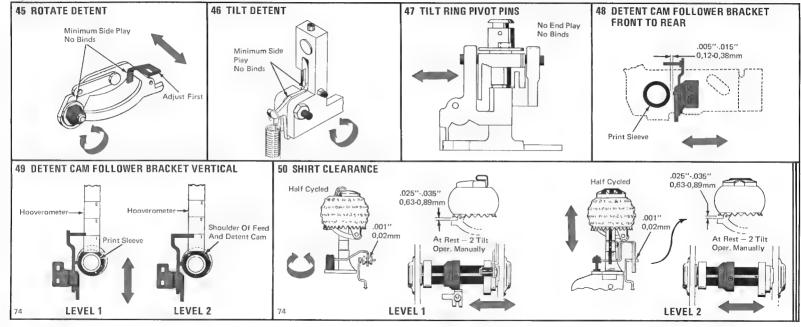


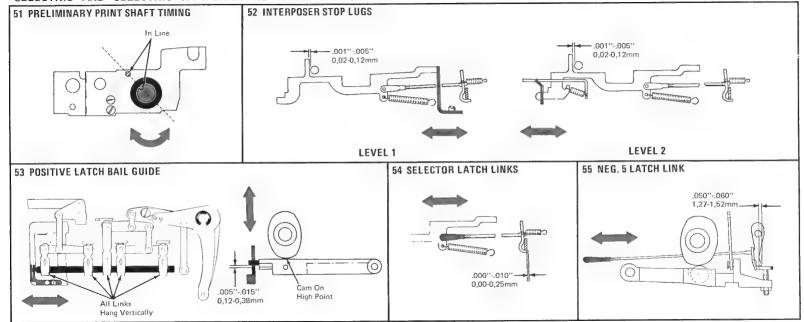




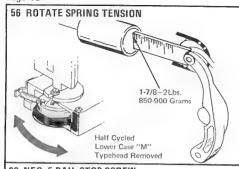




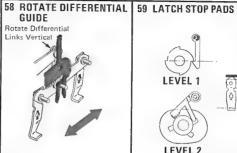


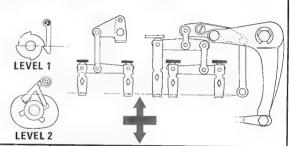


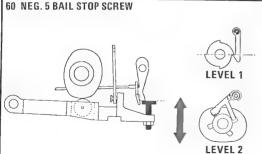
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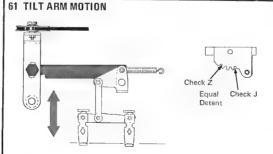


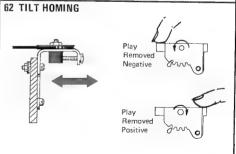




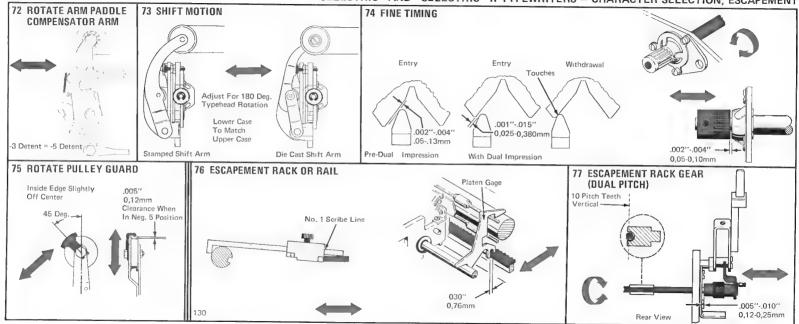


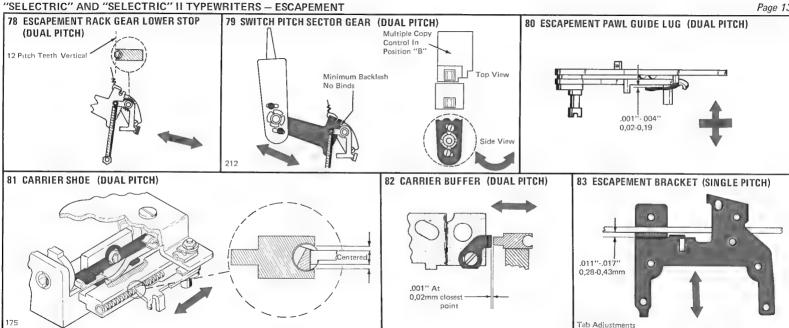


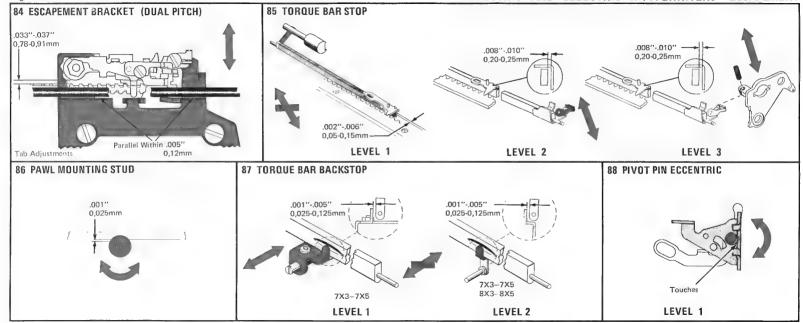




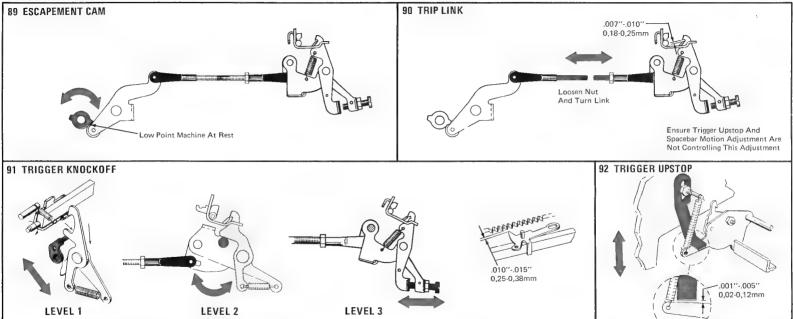
### Page 11 "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - CHARACTER SELECTION **66 ROTATE ARM MOTION** 65 BALANCE ARM 64 TYPEHEAD HOMING 63 ROTATE ARM VERTICAL .015" 1 Scribe Line Positive 1 Scribe Line +5-5 Rotate 0 Detent - +5/-5 Detent Upper Case 71 DAMPER SPRING STOP 68 DAMPER SPRING STOP 69 ROTATE ARM ECCENTRIC STUD **70 ROTATE LINK** 67 ROTATE LINK SOLID ARM **COMPENSATOR ARM** (PRELIMINARY) COMPENSATOR ARM COMPENSATOR ARM .005"-.020" -COMPENSATOR ARM Collapsed 0,12-0,51mm (Head To Bottom 1.52mm Removed) Half Cycle M Half Cycle M .010"-.020" -0.25-0.51mm

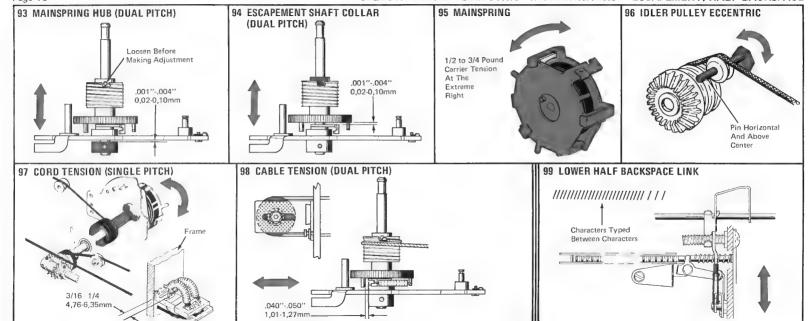


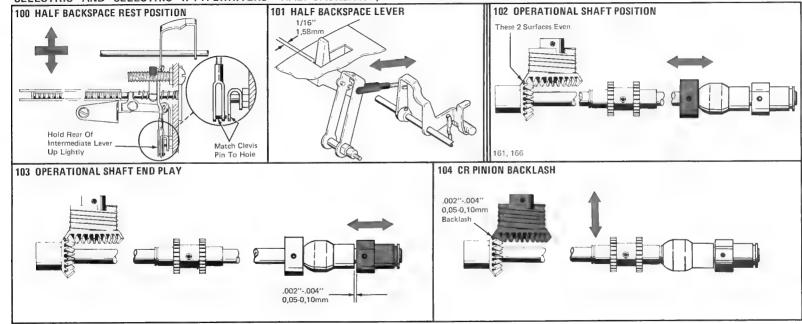


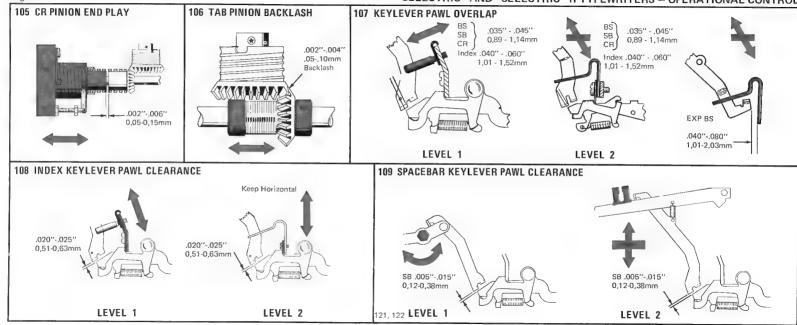


# "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - ESCAPEMENT



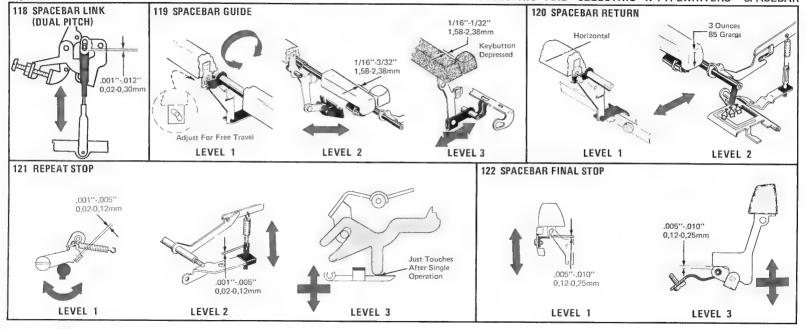




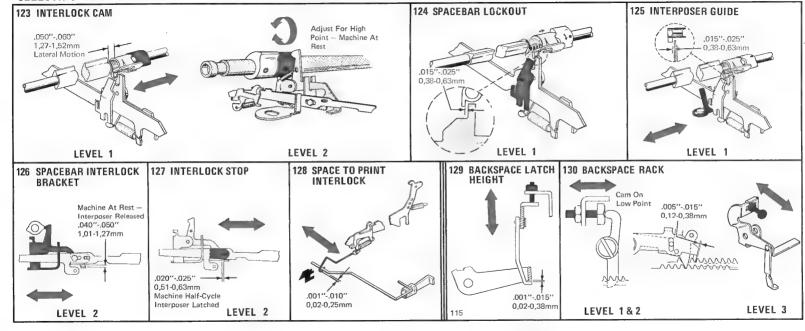


0,02-0,38mm go

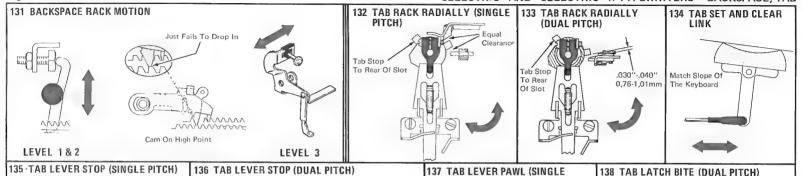
# "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - SPACEBAR

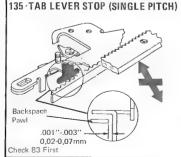


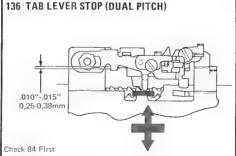
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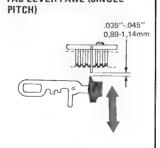


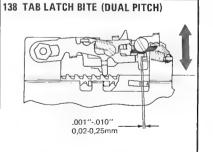
# "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - BACKSPACE, TAB

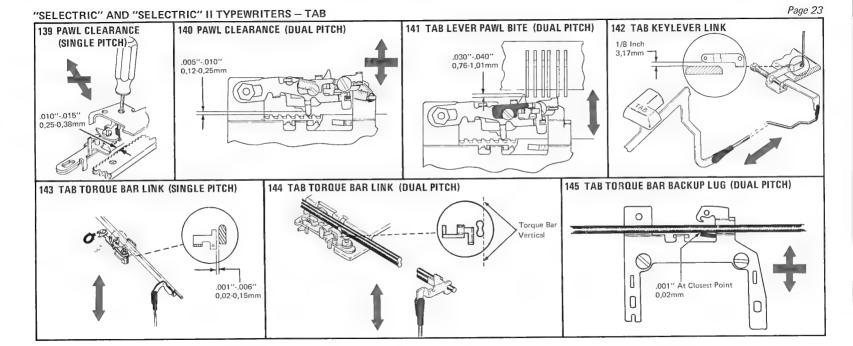


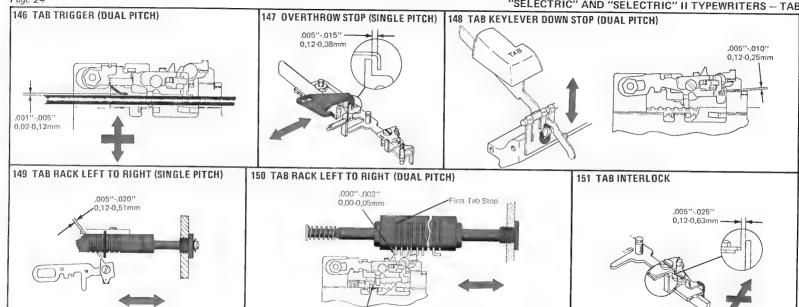




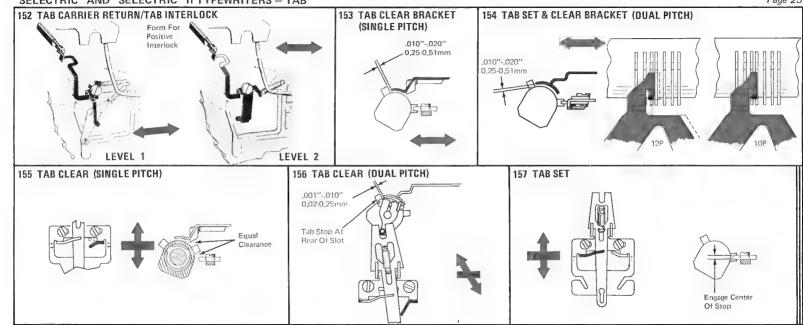


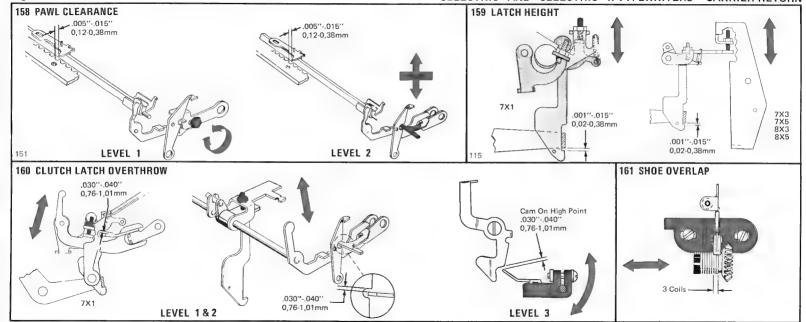




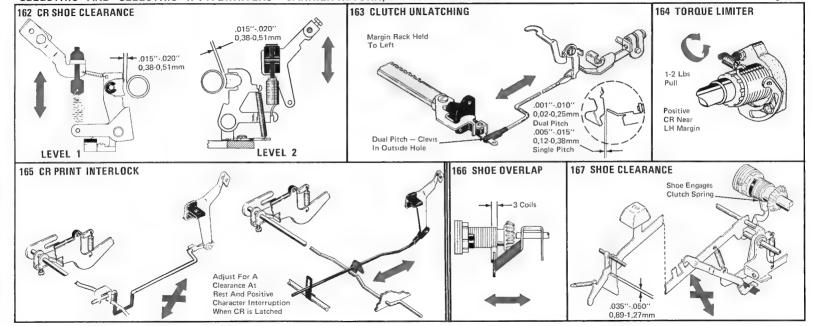


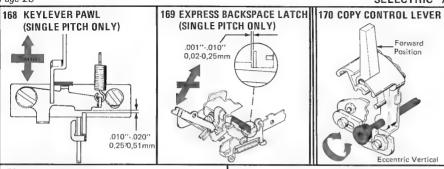
First Escapement Rack Tooth

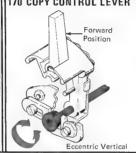


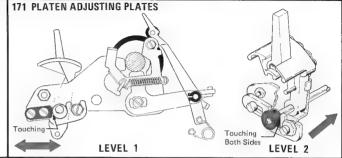


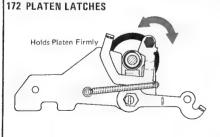
# "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - CARRIER RETURN, EXPRESS BACKSPACE

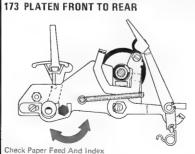


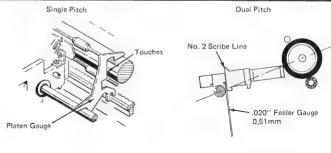


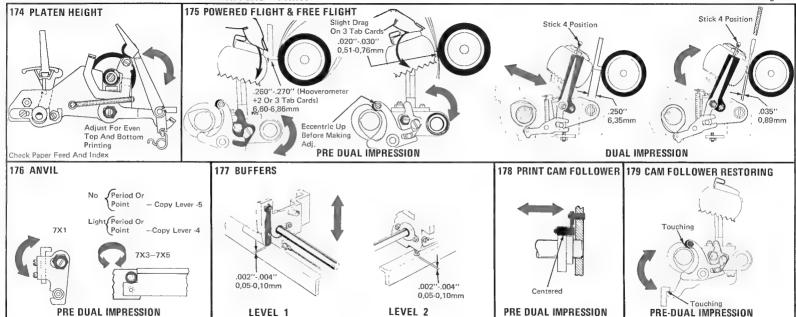


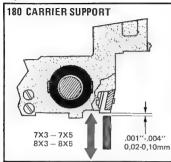


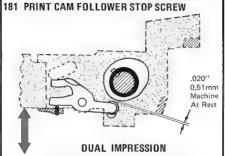


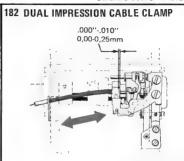


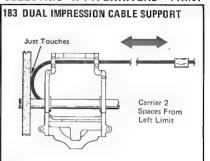


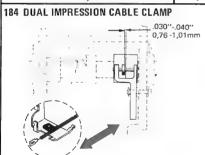


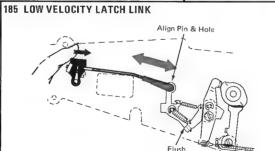


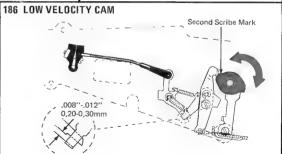




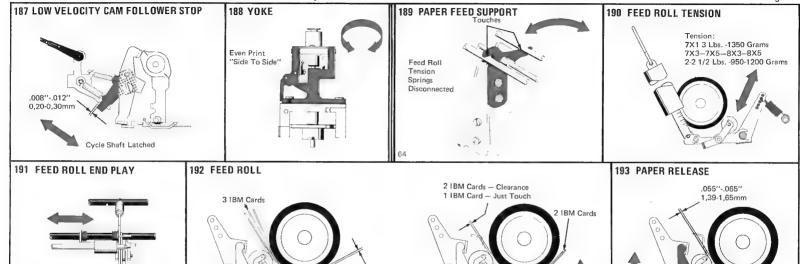








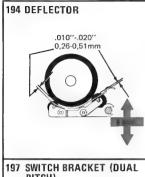
.010"-.015" . 0,26-0,38mm

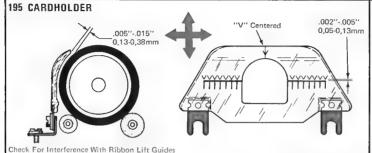


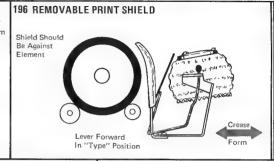
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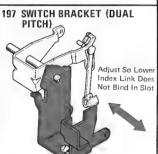
.008"-.012" 0,20-0,30mm

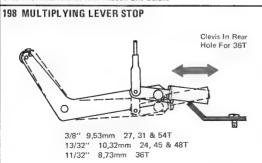
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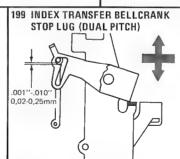


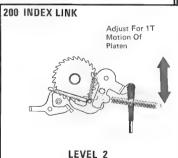




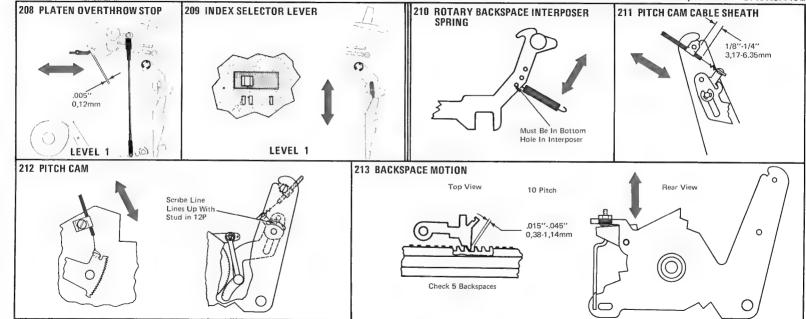




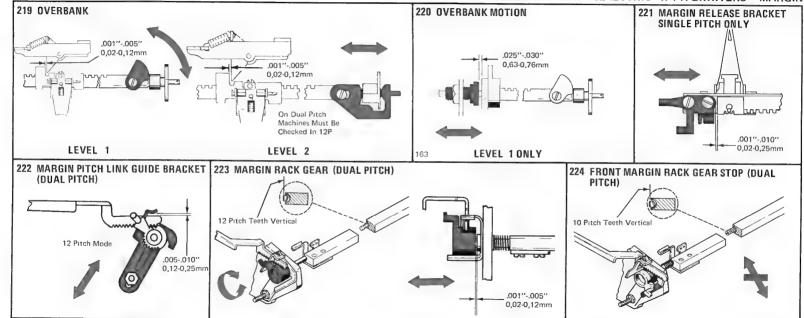


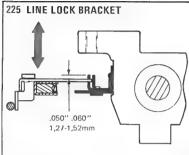


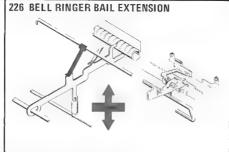
#### "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - INDEX 201 OVERTHROW STOP 202 INDEX SELECTOR CAM 203 INDEX SELECTOR CAM 54 TOOTH 204 LINE POSITION RESET LEVER Form Here To Give Clearance Cam At Rest Double Space Pos Cam On High Point 54 Tooth Roller 24 & 27 Tooth Not To Exceed Roller \_ Lever .010" (0.25mm) .005" In Rest Position 005" .015"-.050" 0.12mm 0.380-1.270mm Overlap Adjust For Proper Tooth The Thickness 0,12-0,38mm Pawl Centered On Camming Entry For 2, 3 Or 4 Tooth Selection LEVEL 2 LEVEL 2 Surfaces In The 1 & 2 Position 206 UPPER INDEX PAWL STOP 207 MULTIPLYING CONTROL LEVER 205 INDEX LINK AND STUD Adjust For Just In 2 Teeth Of A Tooth Feed Just Clears - Changing 4 IBM Cards 1-To-2 Pos. - Cam At Rest Adjust For 1T Platen Motion .015"-.030" 7.101 0,38-0,76mm LEVEL 1 LEVEL 1 LEVEL 1



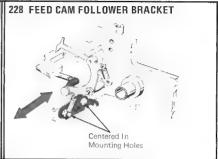
### "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - ROTARY BACKSPACE, MARGIN 216 INDEX INTERLOCK SHAFT 217 INDEX INTERLOCK PADDLE 215 INDEX INTERLOCK LINK 214 BACKSPACE LATCH HEIGHT ,001"-.010" 0,02-0,25mm .020"-,040" 0,51-1,01mm → Vertical Minimum End Play No Binds .001"-.015" 0,02-0,38mm 115 218 MARGIN RACK 7X3 – 7X5 1/32'' 0,793mm 7X1 7X1 Horizontal Horizontal Horizonta Horizontal Horizontal 7X3 - 7X5 8X3 -- 8X5 LEVEL 2 LEVEL 3 LEVEL 1 LEVEL 2 LEVEL 1

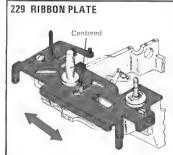


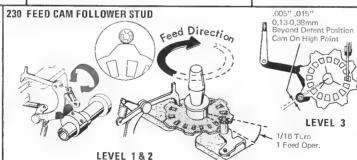




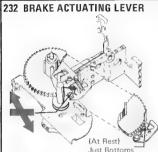


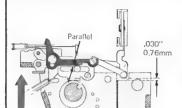












233 RIBBON LIFT GUIDE PLATE





LIFT GUIDE PLATE PARALLEL TO SLOT IN CAM FOLLOWER

B PARALLEL TOO HIGH AT THE REAR

LIFT GUIDE PLATE OUT OF CIPARALLEL TOO HIGH AT THE FRONT

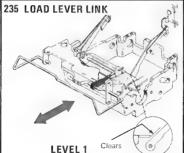


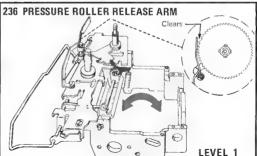
APPROX. .050"

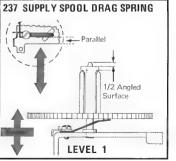
LIFT GUIDE PLATE PARALLEL TO SLOT IN CAM FOLLOWER

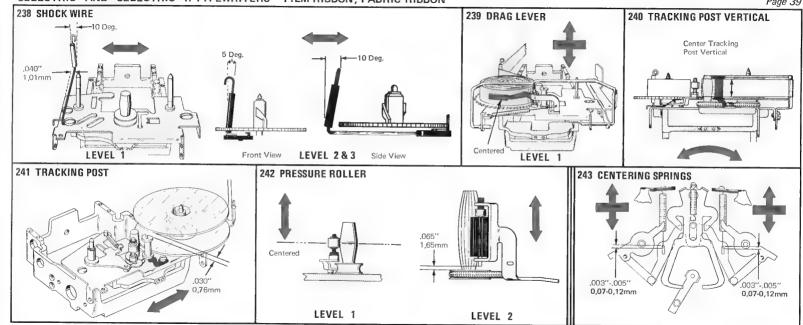
LIFT GUIDE PLATE PARALLEL TO SLOT IN CAM FOLLOWER

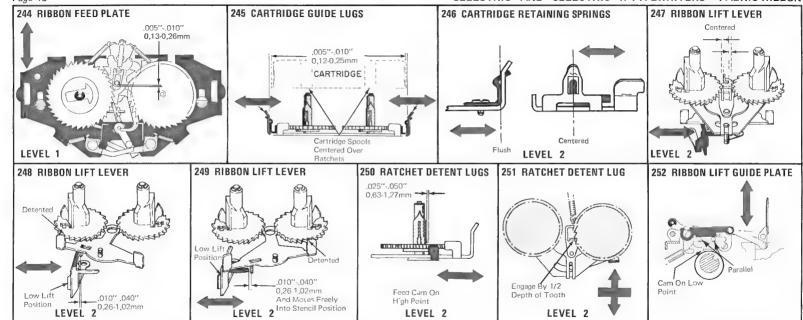
234 RIBBON LIFT CONTROL LINK
0,030" Minimum
0,76mm
0,89-1,65mm

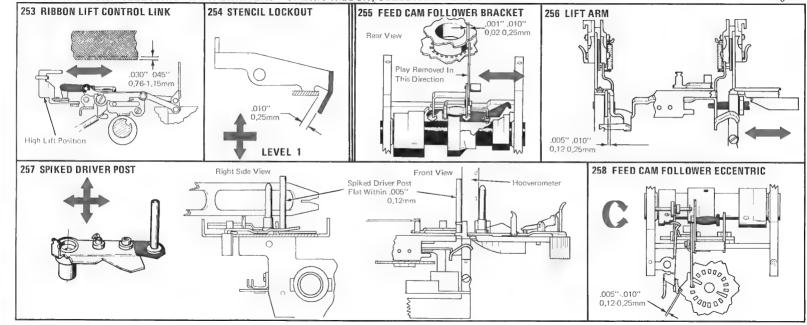


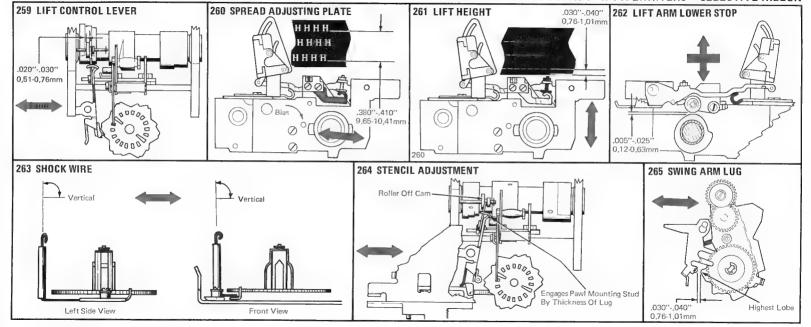


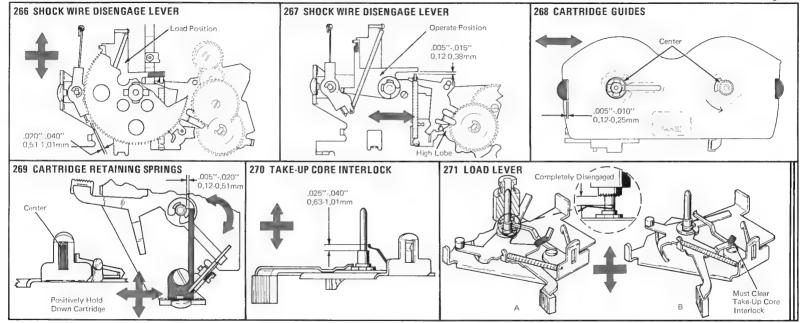




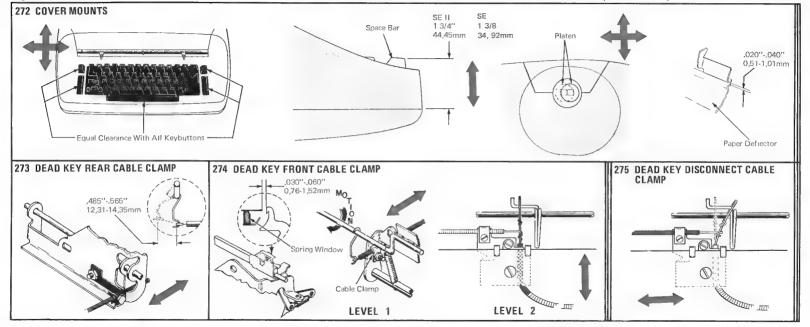




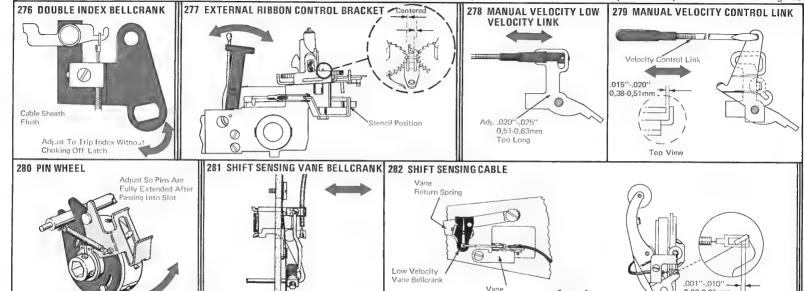




"SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - COVERS, DEAD KEY, DEAD KEY DISCONNECT



## "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - DOUBLE INDEX, EXT. RIBBON CONT., MANUAL VELOCITY CONT., PIN FEED, SHIFT SENSING Page 45



.095"-,105"

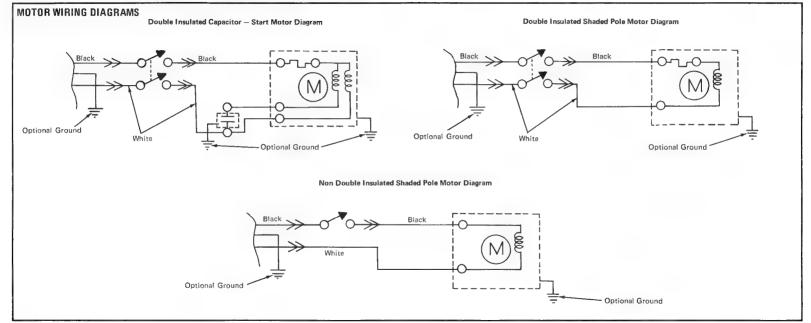
2,41-2,67mm

Control Bracket

0,02-0,25mm

Adj, Front Clamp

.005"	.012"	.0310"	.0315"	.003"	.005"	.006"	.015"
.015"	.018"	.0315"	.0320"	.008"	.011"	.017"	.019"
.021"	.033"	.0320"	.0325"	.014"	.017"		
.005"	.012"	.0325"	.0330"	.025"			



# SUGGESTED CYCLE INSPECTION PROCEDURE FOR "SELECTRIC" TYPEWRITER

Each Inspection Should Include:

- A. Note Operator's Comments
- B. Made Functional Check
- C. Remove Covers And Power Clean

  D. Clean Rubber Parts, Card Holder, Element
- Clean Rubber Parts, Card Holder, Element
   Lubrication
- F. Planned Parts Replacement
- G. Electrical Safety Check

**Eunctional Check** 

H. Call Prevention Machine Check
 Clean Covers

Cycle A

- Selection & Keyboard
- Carrier And Alignment
   Special Carrier Lubrication
- 4. Spring Clutch Maintenance

Cycle B

Operational Adjustments (AII)
 Shift Maintenance

#### CALL PREVENTION MACHINE CHECK

- A REMOVE TYPE ELEMENT
  - 1. Look for a worn type element
    - Check upper ball socket play
       (horizontal and vertical)
    - (horizontal and vertical)

      Check tilt ring side play
  - Check carrier shoe clearance
     Check carrier side play
- 3. HALF CYCLE NEG. 5, NO TILT
  - Check rotate spring tension
  - Check tilt detent side play
     \*Check tilt horning correct
    any drift
- C. REPLACE TYPE ELEMENT

  1. Check rotate for binds (pull
  - shift arm)
    2. Check shirt clearance
  - Half cycle WTORM check detenting and rotate detent side play

- \*Half cycle WTOM (solid arm)
   correct for any drift over
   .020" in pay motion.
- 5. Check timing on M
- D. BACKSPACE
  - Check B/S rack free motion
     Check carrier motion
- E UNLOCK KEYBOARD WITH
  - MACHINE OFF DEPRESS
    CENTER KEYLEVER

    1. Check filter shaft clearance
  - Check interposer travel after latching (.015")
     Check cycle clutch keeper
  - clearance (.000" .002")

    4. Check cycle clutch latch pawl overthrow and clutch latch bite
  - on sleeve

    5. Check cycle shaft end play (.002" .006")
  - 6. Check cycle clutch spring for slippage

- TRIP THE CARRIER RETURN AND HAND CYCLE SLOWLY
  - Watch latch overthrow past keeper (.030" – .040")
  - Check interposer restoring overthrow (,010" .030")
- Check clutch unlatching link
   Reset keyboard to lock when power is off
- LUBRICATION EVERY CALL
  - Motor and clutch
  - Center bearing (oil down side)
     Print shaft wipers replace
  - annually
    4. Escapement rack
  - Escapement raci
  - . Cycle clutch
    . Operational cams
  - Operational cams and ratchet assembly

TIME: Under 5 Minutes

\*Check on every call and inspection

#### LUBRICATION

The "Selectric" Typewriter will not operate dependably and reliably if it is not thoroughly and properly lubricated. The following areas should be lubricated with IBM No. 10 oil:

- Print Shaft Wipers
- Selector Cam Shaft Bearing
- Margin Rack Bearing
- d. Margin Stops
- Carrier Shoe Rotate detent guide, upper and lower ball sockets, tilt
- detent pivots Motor
- Selection Bail Rollers
- Index Pawl Assembly
- All links and clevises at both ends
- Ribbon Feed and Reverse Plate
- B/S intermediate lever Differential assemblies
- m. All functional parts and pivots in operational box n assembly
- Tilt arm pivot and rotate link stud
- Rotate arm pivot and rotate link pivot studs
- Carbon ribbon drive spring and bearing
- Power frame center bearing
- Platen bushings
  - All other rotating or pivoting members at the bearing area which are not specifically excepted in the listing following:

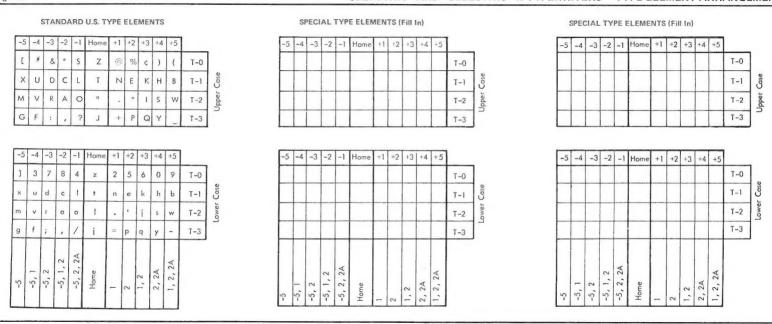
#### Use IBM No. 23 grease on the following:

- Operational ratchets
- Keylever return springs
- Interposer latch springs Ribbon lift control lever
- Line lock bracket
- Filter shaft flutes
- Operational keylever pawl guide studs
- Tape guide
- All cams on print sleeve
- Ball joint Cycle clutch and shift clutch springs
- Feed roll bearing
- Cycle clutch restoring cam
- Low velocity latch contacts
- All sliding parts not excepted

#### DO NOT LUBRICATE

- Shift brake (braking surface)
- Gear train
- Carrier return and tab pinions

## "SELECTRIC" AND "SELECTRIC" II TYPEWRITERS - TYPE ELEMENT ARRANGEMENT



## **MACHINE IDENTIFICATION CODES**

## "SELECTRIC" TYPEWRITER - PRODUCT CODE 21

1st Digit - 7

 $2nd\ Digit-1-Film\ Ribbon$ 

 $2-\mathsf{Fabric}\;\mathsf{Ribbon}$ 

 $3rd \ Digit - 1 - 8 \ 1/2"$  writing line

3 - 11 1/2" writing line

5 - 13" writing line

## "SELECTRIC" II TYPEWRITER - PRODUCT CODE 26

1st Digit - 8

2nd Digit - 3 - Single Pitch

7 - Dual Pitch

3rd Digit -3 - 11'' writing line 5 - 13'' writing line